

APPENDIX 14.2 – SUMMARY OF ENVIRONMENTAL IMPACTS

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
Air Quality Impact					
Construction Impact					
<p>Representative existing residential, commercial developments and government uses within 500m from the boundary of the Project Site</p>	<p><u>TSP</u></p> <ul style="list-style-type: none"> The highest 1-hr average conc.: 135 – 1165 µg/m³ <p><u>RSP</u></p> <ul style="list-style-type: none"> 10th highest 24-hr average conc: 62 – 128 µg/m³ Annual average: 26 – 53 µg/m³ <p><u>FSP</u></p> <ul style="list-style-type: none"> 19th highest 24-hr average conc: 30 – 44 µg/m³ Annual average: 14 – 19 µg/m³ 	<ul style="list-style-type: none"> Annexes 4 and 12 of the EIAO-TM <p><u>TSP</u></p> <p>1-hr average conc.: 500 µg/m³</p> <ul style="list-style-type: none"> Air Quality Objectives (AQO) <p><u>RSP</u></p> <ul style="list-style-type: none"> 24-hr average conc.: 100 µg/m³ (Number of exceedances allowed: 9) Annual average conc.: 50 µg/m³ <p><u>FSP</u></p> <ul style="list-style-type: none"> 24-hr average conc.: 50 µg/m³ (Number of exceedances allowed: 18) 	<p><u>TSP</u></p> <ul style="list-style-type: none"> The highest 1-hr average conc.: Exceedances of EIAO-TM criterion up to 665 µg/m³ <p><u>RSP</u></p> <ul style="list-style-type: none"> 10th highest 24-hr average conc: Exceedances of AQO up to 28 µg/m³ Annual average: Exceedances of AQO up to 3 µg/m³ <p><u>FSP</u></p> <ul style="list-style-type: none"> 19th highest 24-hr average conc: No exceedance was predicted Annual average: No exceedance was predicted 	<p>Watering once every 2 hours on work areas, exposed surface and unpaved road to reduce dust emission.</p> <p>Sealed door and dust collector with dust removal efficiency of at least 80% at the opening of tunnel mined by drill and break.</p> <p>Dust suppression measures and good site practices</p> <ul style="list-style-type: none"> Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. 	<ul style="list-style-type: none"> No adverse residual impacts anticipated

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		<ul style="list-style-type: none"> Annual average conc.: 25 $\mu\text{g}/\text{m}^3$ 		<ul style="list-style-type: none"> Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. Imposition of speed controls for vehicles on site haul roads. Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise. 	
Operation Impact					
Existing and planned residential, commercial developments and	<u>NO₂</u> <ul style="list-style-type: none"> 19th highest 1-hr average conc.: 91 – 135 $\mu\text{g}/\text{m}^3$ 	<ul style="list-style-type: none"> AOO <u>NO₂</u> 1-hr average 	<u>NO₂, RSP and FSP</u> <ul style="list-style-type: none"> No exceedance was predicted 	<ul style="list-style-type: none"> No mitigation measure is required. 	<ul style="list-style-type: none"> No adverse residual impacts anticipated

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<p>government uses within 500m from the boundary of the Project Site</p>	<ul style="list-style-type: none"> • Annual average conc.: 16 – 34 µg/m³ <p><u>RSP</u></p> <ul style="list-style-type: none"> • 10th highest 24-hr average conc: 61 – 64 µg/m³ • Annual average: 26 – 27 µg/m³ <p><u>FSP</u></p> <ul style="list-style-type: none"> • 19th highest 24-hr average conc: 30 – 33 µg/m³ • Annual average: 14 - 15 µg/m³ 	<ul style="list-style-type: none"> • conc.: 200 µg/m³ (Number of exceedances allowed: 18) • Annual average conc.: 40 µg/m³ <p><u>RSP</u></p> <ul style="list-style-type: none"> • 24-hr average conc.: 100 µg/m³ (Number of exceedances allowed: 9) • Annual average conc.: 50 µg/m³ <p><u>FSP</u></p> <ul style="list-style-type: none"> • 24-hr average conc.: 50 µg/m³ (Number of exceedances allowed: 18) • Annual average conc.: 25 µg/m³ 			

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Noise Impact					
Construction Impact					
<p>Representative existing residential developments and education institution within 300m from the boundary of the Project Site</p>	<ul style="list-style-type: none"> Predicted construction noise levels during non-restricted hours: 62 – 91 dB(A) 	<ul style="list-style-type: none"> Annexes 5 and 13 of the EIAO-TM Leq_(30 min) 75dB(A) at 1m from the façade of residential dwellings Leq_(30 min) 70dB(A) at 1m from the façade of Educational Institutions and 65 dB(A) during examinations 	<ul style="list-style-type: none"> Exceedance of the noise criteria by up to 16 dB(A) for residential premises. Exceedance of the noise criteria by up to 12 dB(A) and 17 dB(A) for school during normal period and examination periods respectively. 	<ul style="list-style-type: none"> Use of Quality Powered Mechanical Equipment Use of Movable Noise Barrier, Purpose-built Noise Barrier, Noise Insulating Fabric and Noise Enclosure Sequencing Operation of Construction Activities at critical works area Reduction of PME at critical works area Avoiding carrying out particularly noisy construction activities during examination periods Good site practices <ul style="list-style-type: none"> Only well-maintained plant should be operated on site and plant should be serviced regularly. Silencers or mufflers on construction plant should be utilized and should be properly maintained. Mobile plant should be sited as far away from sensitive uses as possible. Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, where possible, be orientated so that noise is directed away from the nearby 	<ul style="list-style-type: none"> No adverse residual impacts anticipated

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				sensitive uses. - Material stockpiles and other structures should be effectively utilized to screen noise from on-site construction activities.	
Operation Impact					
Representative existing and planned residential developments within 300m from the boundary of the Project Site	<u>Road Traffic Noise</u> <ul style="list-style-type: none"> Predicted overall noise levels: 52 – 86 dB(A) Predicted road traffic noise levels of the Project roads: <10 – 83 dB(A) Maximum contribution from Project roads (when the overall noise level exceeds respective criterion): 24.8 dB(A) <u>Fixed Noise</u> <ul style="list-style-type: none"> Predicted noise level: 55 dB(A) 	<u>Road Traffic Noise</u> <ul style="list-style-type: none"> Annexes 5 and 13 of the EIAO-TM L_{10(1 hour)} 70dB(A) at 1m from the façade of residential dwellings L_{10(1 hour)} 65dB(A) at 1m from the façade of educational institute and place of worship <u>Fixed Noise</u> <ul style="list-style-type: none"> Annexes 5 and 13 of the EIAO-TM IND-TM under Noise Control Ordinance L_{eq (30-min)} 65 dB(A) during day and evening 	<u>Road Traffic Noise</u> <ul style="list-style-type: none"> Exceedance of the noise criteria by up to 16 dB(A) The exceedances are dominantly contributed by the other roads. <u>Fixed Noise</u> <ul style="list-style-type: none"> No exceedance predicted. 	<u>Road Traffic Noise</u> <ul style="list-style-type: none"> Provision of polymer modified friction course (PMFC) as standard surfacing material Provision of a total of 170m long vertical barrier, 240m long cantilever noise barriers, and 1300m long semi-enclosure on Project Road sections. <u>Fixed Noise</u> <ul style="list-style-type: none"> No mitigation measure required. 	<ul style="list-style-type: none"> No adverse residual impacts anticipated.

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		time • $L_{eq (30-min)} 55$ dB(A) during night-time			
Water Quality Impact					
Construction Impact					
Representative water sensitive receivers in the vicinity of the Project and within 500m from the boundary of the Project, covers the Tolo Harbour and Channel WCZ as well as the Victoria Harbour WCZ as designated under the WPCO	The potential sources of water quality impact associated with the construction works would include: <ul style="list-style-type: none"> • Wastewater from general construction activities; • Construction site run-off; • Sewage from construction workforce; • Accidental spillage of chemicals; • Groundwater infiltration arising from tunnel boring; • Water pollution from culvert modification works; • Construction works in close proximity of inland watercourses; and • Groundwater from Contaminated Areas and Contaminated Site Runoff. 	<ul style="list-style-type: none"> • Annexes 6 and 14 of the EIAO-TM • Water Quality Objectives for the Victoria Harbour (Phase Two) Water Control Zone (WCZ), Tolo Harbour and Channel WCZ and Tolo Harbour Supplementary WCZ • Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Mitigation measures and good site practices in ProPECCPN 1/94 "Construction Site Drainage" • Waste Disposal Regulation • Provision of temporary sanitary facilities, such as chemical toilets, for construction workforce • Precaution measures in ETWB Technical Circular (Works) No. 5/2005 • Groundwater infiltration minimisation strategies and post-grouting • Proper interception and treatment of contaminated site runoff and wastewater from land decontamination in compliance with the TM-DSS • Proper treatment or recharge of contaminated groundwater in compliance with the TM-DSS 	<ul style="list-style-type: none"> • No adverse residual impacts anticipated

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		<ul style="list-style-type: none"> • Practical Note for Professional Persons (ProPECC) PN 1/94 and 5/93 • Hong Kong Planning Standards and Guidelines • Environmental, Transport and Works Bureau (ETWC) Technical Circular (Works) No. 5/2005 			
Operation Impact					
<ul style="list-style-type: none"> • Representative water sensitive receivers in the vicinity of the Project and within 500m from the boundary of the Project, covers the Tolo Harbour and Channel WCZ as well as the Victoria Harbour WCZ as designated under the WPCO 	<p>Potential water quality impacts associated with the operation phase include:</p> <ul style="list-style-type: none"> • Non-point source surface run-off from road/bridge/viaduct; • Sewage effluent from the new administration building and ventilation buildings; • Wastewater generated from washing and maintenance operation; and • Tunnel run-off and drainage 	<ul style="list-style-type: none"> • Annexes 6 and 14 of the EIAO-TM • Water Quality Objectives for the Victoria Harbour (Phase Two) WCZ, Tolo Harbour and Channel WCZ and Tolo Harbour Supplementary WCZ • Technical Memorandum 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Adequate design in on-site STP adopted MBR with UV disinfection, an emergency storage tank with 2 hours of ADWF capacity and grease trap for sewage and wastewater generated from administration building which designed with reference to EPD's "Guidelines for the Design of Small Sewage Treatment Plant". • Provision of dual or standby power supply, standby sewage treatment units, flow sensors and alarm systems for the on-site STP. • Provision of spare parts such as electrical and mechanical components of the on-site STP in case of break down / 	<ul style="list-style-type: none"> • No adverse residual impacts anticipated

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		<p>on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)</p> <ul style="list-style-type: none"> • ProPECC PN 5/93 • Guidelines for the Design of Small Sewage Treatment Plant 		<p>emergency.</p> <ul style="list-style-type: none"> • Adequate design in septic tank with soakaway system and active carbon filter for sewage and wastewater generated from ventilation buildings which take into account the guidelines in ProPECC PN 5/93. • Adequate design in on-site STP, petrol interceptor and sedimentation tank for wastewater generated from washing and maintenance operation. • Regular test, maintenances and replacement of membranes or equipment to maintain a good operation condition. • Regular maintenance to all wastewater treatment system, including the on-site STP, septic tank with soakaway system, grease traps, active carbon filter system, petrol interceptor, sedimentation tank, etc. • Waste Disposal Regulation. 	
Waste Management Implications					
Construction Impact					
C&D materials, chemical wastes and general refuse	<ul style="list-style-type: none"> • Around 107,044 m³ of non-inert C&D materials and 1,338,050 m³ of inert C&D materials will be generated from tunnelling works, excavation, site formation works, construction of adits, ventilation/shafts buildings and new administration building and demolition of the existing administration building. 	<ul style="list-style-type: none"> • Annexes 7 and 15 of the EIAO-TM • Waste Disposal Ordinance (Cap. 354) • Waste Disposal (Chemical 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Implementation of good site practices, waste reduction measures and proper storage, collection and transport of waste 	<ul style="list-style-type: none"> • No adverse residual impact anticipated

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	<ul style="list-style-type: none"> • Small quantity of chemical wastes in the order of a few cubic metres per month will be generated from plant operations and maintenance, maintenance of mechanical equipment and potential asbestos waste from demolition of existing administration building. • Around 325 kg per day of general refuse will be generated from construction works and on-site staff and workers 	<ul style="list-style-type: none"> • Waste (General) Regulation (Cap. 354C) • Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N) • Land (Miscellaneous Provisions) Ordinance (Cap. 28) • Public Health and Municipal Services Ordinance (Cap. 132BK) – Public Cleansing and Prevention of Nuisances Regulation • Air Pollution Control Ordinance (APCO) 			
Operation Impact					
Screening & grits, sludge, chemical	<ul style="list-style-type: none"> • Small quantity of chemical wastes in the order of a few cubic metres per month will be generated from maintenance of 	<ul style="list-style-type: none"> • Annexes 7 and 15 of the EIAO-TM 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Implementation of waste reduction measures and proper storage, collection and transport of waste 	<ul style="list-style-type: none"> • No adverse residual impact anticipated

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wastes and general refuse	facilities and equipment <ul style="list-style-type: none"> • Around 97.5 kg per day of general refuse will be generated from on-site staff and office activities • The total quantity of screening and grits generated from the on-site STP is expected to be less than 0.01 m³/day • About 1m³/day of sewage sludge will be generated from the on-site STP 	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap. 354) • Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) • Public Health and Municipal Services Ordinance (Cap. 132BK) – Public Cleansing and Prevention of Nuisances Regulation 			
Land Contamination					
Onsite construction workers and future occupants	<ul style="list-style-type: none"> • A total of 11 facilities / areas were identified with potential land contamination concerns at the tunnel portal areas within the Project Area. 	<ul style="list-style-type: none"> • Annex 19 of the EIAO-TM • Guidance Note for Contaminated Land Assessment and Remediation (EPD, 2007) • Practice Guide for Investigation and Remediation of Contaminated 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • A sampling and testing programme, targeting the potential hotspots identified within the Project Area, had been proposed. • Site re-appraisal should be carried out for the whole Project Area at a later stage of the Project in order to address any new contamination issues caused by the (i) changes in operation of the identified potentially contaminated site and (ii) changes in land use within the Project Area. The submission of supplementary Contamination Assessment Plan(s) (CAP(s)), associated site investigation (SI) works and any necessary 	<ul style="list-style-type: none"> • Any soil / groundwater contamination would be identified and properly treated prior to the construction works. No adverse residual impact anticipated.

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		<p>Land (EPD, 2011)</p> <ul style="list-style-type: none"> Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management (EPD, 2007) 		<p>remediation should be carried out at the concerned facilities and any new contaminated area identified in the site re-appraisal, prior to the commencement of construction at the potentially contaminated area(s). The further assessment and remediation works would follow EPD's prevailing guidelines.</p>	
Ecological Impact (Terrestrial)					
Construction Impact					
<p>Natural/Semi-natural habitats including woodland, mixed woodland, shrubland and the associated wildlife (including species of conservation importance)</p>	<ul style="list-style-type: none"> Permanent loss (14.80 ha) and temporary loss (2.75 ha) of habitats Affect about 0.16 ha woodland, 0.17 ha plantation, less than 0.01 ha modified watercourse and 0.81 ha developed area located at the LRCP permanently Potential impact to four flora species of conservation importance (including one individual of Incense Tree, nine individuals of Butulang Canthium, 19 individuals of Ailanthus and nine individuals Rhodoleia) recorded within the Project footprint Potential direct injury/mortality to wildlife and bird collision Indirect disturbance impact (e.g. dust, noise, glare, site runoff, groundwater infiltration) on natural habitats and 	<ul style="list-style-type: none"> Annexes 8 and 16 of the EIAO-TM EIAO Guidance Notes Nos. 3/2010, 6/2010, 7/2010 and 10/2010 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Avoidance of encroachment on recognised sites of conservation importance (i.e. LRCP (about 197 ha) and Beacon Hill SSSI (about 34 ha)) within the assessment area as far as possible Carefully design the detailed layout of the construction works to avoid/minimise direct impact on flora species of conservation importance recorded in the project footprint. If direct impact is unavoidable, mitigation measures to (e.g. transplant, compensate) the flora species of conservation importance should be conducted, where possible, according to Final Plant Preservation and Transplantation Proposal to be submitted at later stage 	<ul style="list-style-type: none"> No adverse residual impact anticipated

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	associated wildlife in the vicinity			<ul style="list-style-type: none"> • Reinstatement of temporarily affected area within the Project footprint (about 1.48 ha), including those within LRCP (about 0.25 ha), by woodland mix planting according to the Final Reinstatement Plan to be submitted at later stage • Direct impact on fauna species of conservation importance and their key habitats are avoided. Precautionary measure such as a pre-construction survey in natural habitats within and in the surrounding of the Project footprint is recommended (e.g. woodland, mixed woodlands and natural watercourse within and near the Project footprint) prior to the commencement of construction activities. In case any fauna species of conservation importance recorded would be directly impacted, a Protection and Translocation Proposal should be prepared to recommend suitable mitigation measures at later stage. • Compensate the unavoidable loss of woodland within Lion Rock Country Park (LRCP) (0.25 ha) by provision of compensation woodland in a ratio not less than 1:1 in terms of area (at least 0.25 ha) in accordance with the Final Woodland Compensation Plan to be submitted at later stage • Implementation of good site practices 	

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				<p>(e.g. provision of screening, control of glare / lighting, groundwater infiltration minimization measures, etc), regular site inspection and monitoring requirement</p> <ul style="list-style-type: none"> Implementation of groundwater infiltration minimization measures (e.g. groundwater control strategies, post-grouting) as stated in the Water Quality Section above Adoption of NTHMMs with smaller footprint (rigid barriers and flexible barriers) to avoid and minimize the potential impacts to LRCP, natural habitats and associated vegetation 	
Operation Impact					
<p>Natural/Semi-natural habitats including woodland, mixed woodland, shrubland and the associated wildlife (including species of conservation importance)</p>	<ul style="list-style-type: none"> Disturbance impacts (e.g. dust, noise, glare) to the natural/semi-natural habitats and the associated wildlife (including species of conservation importance) in the vicinity of Project site Direct mortality (e.g. road kill) and bird collision 	<ul style="list-style-type: none"> Same as construction phase 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Implementation of mitigation measures (e.g. planting of peripheral screening plants/vertical green, control of glare / lighting) measures Carefully design the noise barrier (e.g. location, use of tinted materials and superimposing dark patterns or strips on the noise barrier) 	<ul style="list-style-type: none"> No adverse residual impact anticipated
Cultural Heritage Impact					
Construction Impact					
<p>Cultural heritage resources, Site of Archaeological Interest</p>	<ul style="list-style-type: none"> Indirect impacts of ground-borne vibration, settlement and tilting would be anticipated on the Ex Kowloon Canton Railway Beacon Hill Tunnel (Government Historic Site) Direct impact would be anticipated to 	<ul style="list-style-type: none"> EIAO-TM Annexes 10 and 19 Guidelines for Cultural Heritage Impact 	<ul style="list-style-type: none"> N/A 	<p><u>Monitoring of vibration, settlement and tilting</u></p> <ul style="list-style-type: none"> Monitoring of vibration, settlement and tilting incorporated with a set of Alert, Alarm and Action (AAA) system shall be employed for Ex Beacon Hill Tunnel during the construction phase, measuring 	<ul style="list-style-type: none"> N/A

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	the two Lion Rock tunnels and associated buildings	Assessment		<p>inside the tunnel tube at locations closest to the proposed construction works.</p> <ul style="list-style-type: none"> • Monitoring proposal should be submitted to AMO for agreement before commencement of works. • Records of monitoring should be submitted regularly to AMO. • AMO should be alerted in case any irregularities are observed. <p><u>Pre and post condition survey</u></p> <ul style="list-style-type: none"> • Pre and post condition survey of Ex Beacon Hill Tunnel (Government Historic Site) should be conducted by professional qualified building surveyor or engineer. • Survey results shall be submitted to AMO for record. <p><u>Adopt similar fonts of the name of the tunnel and colour scheme of associated buildings</u></p> <ul style="list-style-type: none"> • Fonts on both sides of the portals of the two tunnels should be kept or replicated and placed on similar position as the current setting • The colour scheme of associated buildings could be adopted to the new administrative buildings in order to maintain the original sentiment. • The two commemorative plaques marking the opening ceremony of the tunnel should be kept at prominent position at the new administrative buildings visible to all guests. • Detailed photographic recording on the 	

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				<p>Lion Rock Tunnel and its associated buildings (both exterior and interior) should be conducted before any works to commence. A copy of the photographic documentation should be provided to AMO for record.</p> <ul style="list-style-type: none"> As a precautionary measure, AMO should be informed immediately in case of discovery of antiquities or supposed antiquities in the course of works, so that appropriate mitigation measures, if needed, can be timely formulated and implemented in agreement with AMO. 	
Operation Impact					
Cultural heritage resources, Site of Archaeological Interest	<ul style="list-style-type: none"> No adverse impact would be anticipated on both built heritages and archaeology during the operational phase. 	<ul style="list-style-type: none"> EIAO-TM Annexes 10 and 19 Guidelines for Cultural Heritage Impact Assessment 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> No mitigation measure would be required 	<ul style="list-style-type: none"> N/A
Landscape and Visual Impacts					
Construction Impact					
Landscape Resources (LRs)	<ul style="list-style-type: none"> Substantial landscape impact on LR-3.2 Moderate landscape impact on LR-1.1, LR-1.2, LR-3.1, LR-3.3 and LR-4.2 Slight landscape impact on LR-6.1 and LR-6.3 No discernible change in other LRs identified within the study boundary of the Project 	<ul style="list-style-type: none"> Annexes 10 and 18 of the EIAO-TM 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Preservation of Existing Vegetation Control of Night-time Lighting Glare Erection of Decorative Screen Hoarding Management of Construction Activities and Facilities Reinstatement of Temporarily Disturbed Landscape Areas 	<ul style="list-style-type: none"> Moderate residual landscape impact on LR-1.1, LR-1.2, LR-3.1, LR-3.2, LR-3.3 and LR-4.2 No discernible change in other LRs identified within the study boundary of

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				<ul style="list-style-type: none"> • Minimize the Direct Conflict with Lion Rock Country Park • Minimize Disturbance on Watercourses 	the Project
Landscape Character Areas (LCAs)	<ul style="list-style-type: none"> • Substantial landscape impact on LCA-1.2 and LCA-5.2 • Moderate landscape impact on LCA-1.1, LCA-1.3, LCA-1.4, LCA-2.1, LCA-2.2, LCA-3.2 and LCA-5.1 • Slight landscape impact on LCA-4.1 • No discernible change in other LCAs identified within the study boundary of the Project 	<ul style="list-style-type: none"> • Annexes 10 and 18 of the EIAO-TM 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Preservation of Existing Vegetation • Control of Night-time Lighting Glare • Erection of Decorative Screen Hoarding • Management of Construction Activities and Facilities • Reinstatement of Temporarily Disturbed Landscape Areas • Minimize the Direct Conflict with Lion Rock Country Park • Minimize Disturbance on Watercourses 	<ul style="list-style-type: none"> • Moderate residual landscape impact on LCA-1.1, LCA-1.2, LCA-1.3, LCA-1.4, LCA-2.1, LCA-2.2, LCA-3.2, LCA-5.1 and LCA-5.2 • Slight residual landscape impact LCA-4.1 • No discernible change in other LCAs identified within the study boundary of the Project
Visually Sensitive Receivers (VSRs)	<ul style="list-style-type: none"> • Substantial visual impact on R-03, R-04, R-07, I-01, O-04 and T-02 • Moderate visual impact on R-02 and R-06 • Slight visual impact on R-01, R-10, O-01, O-03, T-01, T-03 and T-05 • Insubstantial visual impact on other VSRs 	<ul style="list-style-type: none"> • Annexes 10 and 18 of the EIAO-TM 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Preservation of Existing Vegetation • Control of Night-time Lighting Glare • Erection of Decorative Screen Hoarding • Management of Construction Activities and Facilities • Reinstatement of Temporarily Disturbed Landscape Areas • Minimize the Direct Conflict with Lion Rock Country Park 	<ul style="list-style-type: none"> • Moderate residual visual impact on R-02, R-03, R-04, R-06, R-07, I-01, O-04 and T-02 • Slight residual visual impact on R-01, R-10, O-01, O-03, T-01, T-03 and T-05 • Insubstantial residual visual impact on other VSRs

APPENDIX 14.2 – SUMMARY OF ENVIRONMENTAL IMPACTS

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
Operation Impact					
Landscape Resources (LRs)	<ul style="list-style-type: none"> Substantial landscape impact on LR-3.2 Moderate landscape impact on LR-1.1, LR-1.2, LR-3.1, LR-3.3 and LR-4.2 Slight landscape impact on LR-6.1 and LR-6.3 No discernible change in other LR's identified within the study boundary of the Project 	<ul style="list-style-type: none"> Annexes 10 and 18 of the EIAO-TM 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Compensatory Tree Planting (min. 145 heavy standard trees) for Loss of approximate 2,925 nos. of Existing Trees Compensatory Woodland Mix Planting (7,720m.sq.) within site (about 2,070 tree whips) and provision of off-site compensation woodland (about 0.3 ha or 1,200 native seedlings/whip trees) Aesthetically pleasing design of Aboveground Structures Aesthetically pleasing design of Highways Structures and Slope Associated Structures Aesthetically pleasing design of footbridges, noise barriers and noise enclosures Provision of Green Roof Provision of Buffer Planting / Roadside Planting Greening Works on Slopes and associated structures 	<ul style="list-style-type: none"> Slight residual impact during day 1 of operation and insubstantial residual impact during year 10 of operation on LR-1.1, LR-1.2, LR-3.1, LR-3.2, LR-3.3 and LR-4.2 Insubstantial residual impact during day 1 and year 10 of operation on other LR's
Landscape Character Areas (LCAs)	<ul style="list-style-type: none"> Substantial landscape impact on LCA-1.2 and LCA-5.2 Moderate landscape impact on LCA-1.1, LCA-1.3, LCA-1.4, LCA-2.1, LCA-2.2, LCA-3.2 and LCA-5.1 Slight landscape impact on LCA-4.1 No discernible change in other LCAs 	<ul style="list-style-type: none"> Annexes 10 and 18 of the EIAO-TM 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Compensatory Tree Planting (min. 145 heavy standard trees) for Loss of approximate 2,925 nos. of Existing Trees Compensatory Woodland Mix Planting (7,720m.sq.) within site (about 2,070 tree whips) and provision of off-site 	<ul style="list-style-type: none"> Slight residual impact during day 1 of operation and insubstantial residual impact during year 10 of operation on LCA-1.1, LCA-1.2, LCA-

APPENDIX 14.2 – SUMMARY OF ENVIRONMENTAL IMPACTS

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	identified within the study boundary of the Project			compensation woodland (about 0.3 ha or 1,200 native seedlings/whip trees) <ul style="list-style-type: none"> • Aesthetically pleasing design of Aboveground Structures • Aesthetically pleasing design of Highways Structures and Slope Associated Structures • Aesthetically pleasing design of footbridges, noise barriers and noise enclosures • Provision of Green Roof • Provision of Buffer Planting / Roadside Planting • Greening Works on Slopes and associated structures 	1.3, LCA-1.4, LCA-2.1, LCA-2.2, LCA-3.2, LCA-4.1, LCA-5.1 and LCA-5.2. <ul style="list-style-type: none"> • Insubstantial residual impact during day 1 and year 10 of operation on other LCAs
Visually Sensitive Receivers (VSRs)	<ul style="list-style-type: none"> • Substantial visual impact on R-03, R-04, R-07, I-01, O-04 and T-02 • Moderate visual impact on R-02 and R-06 • Slight visual impact on R-01, R-10, O-01, O-03, T-01, T-03 and T-05 • Insubstantial visual impact on other VSRs 	<ul style="list-style-type: none"> • Annexes 10 and 18 of the EIAO-TM 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Compensatory Tree Planting (min. 145 heavy standard trees) for Loss of approximate 2,925 nos. of Existing Trees • Compensatory Woodland Mix (7,720m.sq.) within site (about 2,070 tree whips) and provision of off-site compensation woodland (about 0.3 ha or 1,200 native seedlings/whip trees) • Aesthetically pleasing design of Aboveground Structures • Aesthetically pleasing design of Highways Structures and Slope Associated Structures 	<ul style="list-style-type: none"> • Moderate residual impact during day 1 of operation and during year 10 of operation on VSRs R-04, R-07, I-01, O-04 and T-02 • Slight residual impact during day 1 of operation and during year 10 of operation on VSRs R-02 and O-03 • Slight residual impact during day 1 of operation and insubstantial

APPENDIX 14.2 – SUMMARY OF ENVIRONMENTAL IMPACTS

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
				<ul style="list-style-type: none"> • Aesthetically pleasing design of footbridges, noise barriers and noise enclosures • Provision of Green Roof • Provision of Buffer Planting / Roadside Planting • Greening Works on Slopes and associated structures 	<ul style="list-style-type: none"> • residual impact during year 10 of operation on VSRs R-01, R-03, R-06, R-10, O-01, T-01, T-03 and T-05 • Insubstantial residual visual impact during day 1 and year 10 of operation on other VSRs
Hazard to Life					
Existing and planned population in the vicinity of the LPG Compound and Project	<ul style="list-style-type: none"> • The off-site individual risk level is far below 1×10^{-5} per year and the societal risk partially falls into the "ALARP" region 	<ul style="list-style-type: none"> • Annex 4 of the EIAO-TM 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • No adverse impact is anticipated. Nonetheless, implementation of good safety practices during construction phase are recommended. These include: <ul style="list-style-type: none"> - Establishment of emergency response plans; - Safety/ emergency response training and drills for all personnel; and - Maintain the number of construction workers onsite to a minimum. 	<ul style="list-style-type: none"> • No adverse residual impact anticipated